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(56) Documents Cited

WO 1998/047113 A1

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(54) Abstract Title

Gaming machine payment system

(57) Gaming machine payment apparatus 4 arranged in use to be physically attached as a separate unit to a gaming machine, the gaming machine having a coin mechanism 2 for receiving a gaming fee from a player and a control board 8 having an input for receiving a signal from the coin mechanism 2 when a player has inserted a correct gaming fee. The gaming machine payment apparatus comprises a smart card reader/writer 5 for reading data from and writing data to a player's smart card inserted into the reader/writer, said data representing a monetary value, a processor 7 arranged to receive data read from the smart card and to deduct a gaming fee from the corresponding monetary value and to write the new monetary value to the smart card, and to generate a replica of said signal produced by the coin mechanism 2, and an output coupled to said input port of the gaming machine control board 8 for providing said replica signal to the control board 8. Preferably the apparatus 4 is connected via a LAN to a control computer 6.

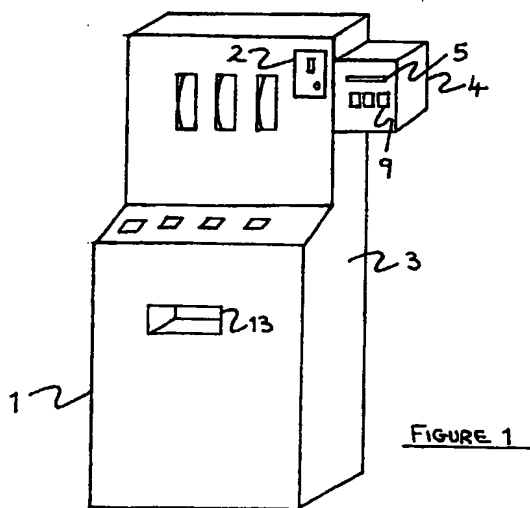


FIGURE 1

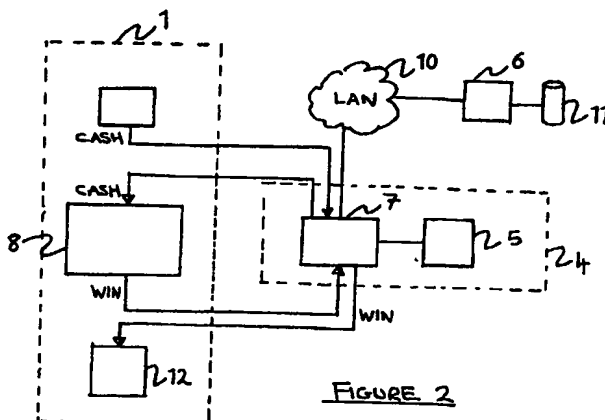


FIGURE 2

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1995

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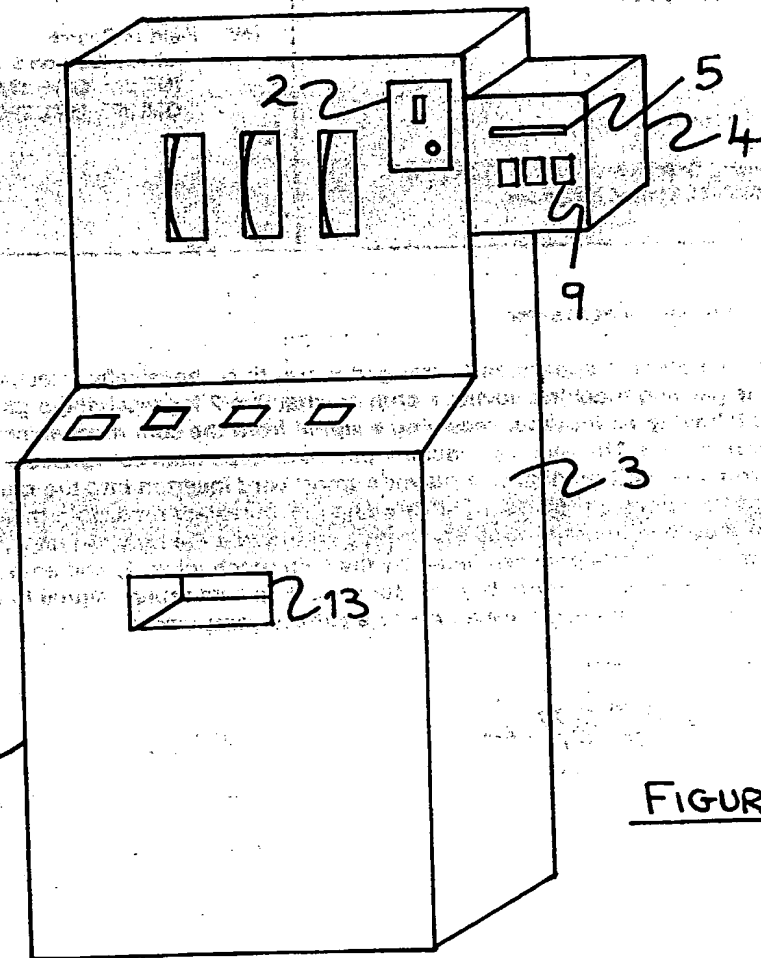


FIGURE 1

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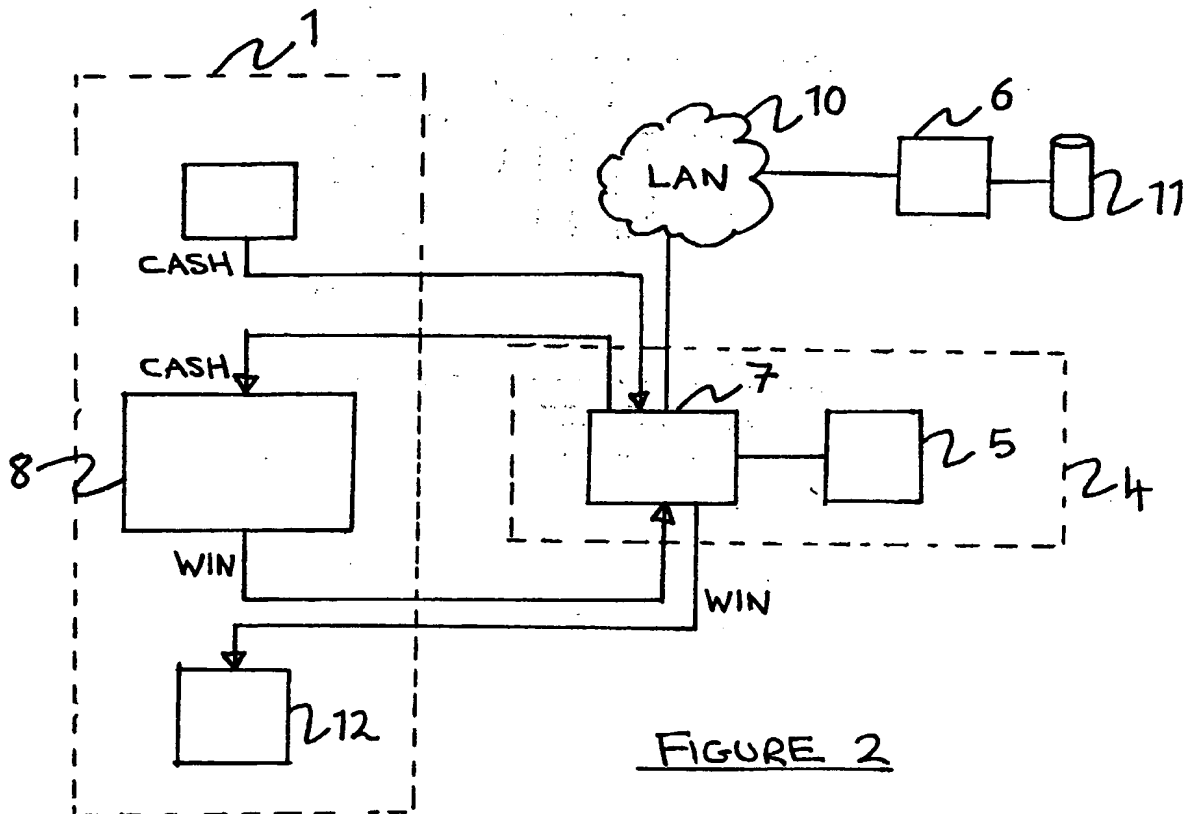


FIGURE 2

### Gaming Machine Payment System

The present invention relates to a gaming machine payment system and more particularly to such a system having means for deducting a gaming fee from a player's smart card.

Many different types of electronic and mechanical gaming machines are currently in use. These range from pinball machines and slot machines to arcade style video games. At a commercial level, players are required to pay a gaming fee for each game played. Traditionally, gaming machines have a coin mechanism which accepts and "counts" coins (or notes) placed into a slot by a player. More recently, gaming machines have been provided with a credit or smart card reader which is integrated into the machines, and which allow a gaming fee to be deducted from or charged to a player's card. In certain countries, legal restrictions on gambling have prevented the widespread introduction of such machines.

According to a first aspect of the present invention there is provided gaming machine payment apparatus arranged in use to be physically attached as a separate unit to a gaming machine, the gaming machine having a coin mechanism for receiving a gaming fee from a player and a control board having an input for receiving a signal from the coin mechanism when a player has inserted a correct gaming fee, the gaming machine payment apparatus comprising:

a smart card reader/writer for reading data from and writing data to a player's smart card inserted into the reader/writer, said data representing a monetary value;

a processor arranged to receive data read from the smart card and to deduct a gaming fee from the corresponding monetary value and to write the new monetary value to the smart card, and to generate a replica of said signal produced by the coin mechanism; and

an output coupled to said input port of the gaming machine control board for providing said replica signal to the control board.

Preferably, said processor has an input coupled to an output of the gaming machine control board for receiving win values therefrom, the processor being arranged to write data to the smart card via the smart card reader/write to credit a monetary value stored on the smart card with the win value.

5

Preferably, the gaming machine payment apparatus has an output coupled to a central computer server, said processor being arranged to transmit an updated smart card monetary value to the central server.

- 10 Preferably, the processor has means for checking the validity of a smart card inserted into the smart card reader/writer. This means may comprise means for reading an expiry time stamp from the card and for comparing the time stamp against the current time. Only if the time stamp is earlier than the current time is the player allowed to play.

15

Preferably, said apparatus comprises player actuatable means for selecting single game or multigame play options, and said processor is arranged to activate or deactivate said options according to the monetary value read from a smart card, and for deducting an appropriate gaming fee from that monetary value depending upon the option selected by a player. Said replica signal depends upon the option selected by the player.

20

Preferably, said apparatus is arranged to receive said signals from the coin mechanism, and to relay these to said input of the gaming machine control board.

- 25 According to a second aspect of the present invention there is provided a system for controlling a plurality of gaming machine payment apparatus according to the first aspect of the present invention, the system comprising:

a central computer server coupled to an output of each gaming machine payment apparatus, the central computer server having a memory for storing customer account numbers and respective monetary values, and means for synchronising monetary values stored in said memory with monetary values written to smart cards by said gaming machine apparatus.

30

Preferably, said system comprises a Local Area Network to which said central computer server and each of said gaming machine payment apparatus are connected.

5 According to a third aspect of the present invention, there is provided a method of paying a fee for playing a gaming machine, the gaming machine having a coin mechanism for receiving a gaming fee from a player and a control board having an input for receiving a signal from the coin mechanism when a player has inserted a correct gaming fee, the method comprising:

- 10 reading data from and writing data to a player's smart card inserted into a smart card reader/writer, said data representing a monetary value;

receiving data read from the smart card and deducting a gaming fee from the corresponding monetary value and writing the new monetary value to the smart card, and generating a replica of said signal produced by the coin mechanism; and

15 providing said replica signal to said input of the control board.

For a better understanding of the present invention and in order to show how the same may be carried into effect reference will now be made, by way of example, to the accompanying drawings in which:

20 Figure 1 illustrates a gaming machine having a smart card payment add-on device;

Figure 2 is a block diagram illustrating components of a smart card payment system incorporating the device of Figure 1.

There is illustrated in Figure 1 a gaming machine 1 of a type colloquially referred to as  
25 a slot machine. The machine 1 has a coin mechanism 2 for receiving coins of various denominations inserted by a player. Typically, the machine 1 has a fixed fee per play (e.g. 50 pence), and computes the number of plays available to a player depending on the total value of coins inserted into the coin mechanism 2. Attached to a side 3 of the gaming machine 1 is a smart card payment device 4. This device 4 comprises a smart  
30 card reader/writer having a smart card receiving slot 5. The smart card payment device 4 is coupled to a control board and the coin mechanism 2 of the gaming machine, and to a smart card control server, as will be described below.



Players are issued with smart cards. Typically, these players are customers of a leisure or social club in whose premises the gaming machine 1 is located - a number of gaming machines may be located within the club. Each smart card has a built in memory (which may be a magnetic strip or a memory chip) in which is stored a customer account number uniquely identifying the customer, and a monetary value. A customer adds money to his card by, for example, "charging" the card at a pay station or at a reception desk of the club. When a customer enters the club, he is required to enter his smart card into a "welcome" terminal. This terminal stores a time stamp in the card's memory. The time stamp may be a fixed time period (e.g. four hours) in advance of the current time, or may be an absolute time, e.g. 11pm "today".

Figure 2 is a block diagram illustrating components of the smart card payment device 4 and the gaming machine 1, as well as of a smart card control server 6. Electronic signals generated by the coin mechanism 2 in response to the insertion of coins into the mechanism are sent to a processor 7 of the smart card payment device 4. To achieve this, a modification of the gaming machine 1 is required - normally these signals are coupled directly to an input of a control board 8 of the gaming machine. Upon receipt of these signals, the processor 7 recognises that coins have been inserted and sends a corresponding signal (i.e. a replica of the signal received from the coin mechanism 2) to the input of the control board 8 at which the signals are expected. Processors on the control board 8 credit the player with the appropriate number of plays, and the player can continue to play the gaming machine.

If a player opts to pay for a game using his smart card, he inserts this into the smart card receiving slot 5 of the smart card payment device 4. The processor 7 of the device 4 first verifies that the time stamp stored on the card is a valid time stamp. If it is not valid, the card is ejected and the player informed (e.g. using an LCD display on the device 4). If the time stamp is valid, the monetary value stored on the card is read, and the total number of plays available to the player computed. Provided on the front of the smart card payment device 4 is a set of option buttons 9. The option buttons 9 allow a player to select either a single play, three plays, or five plays. The buttons are activated

and illuminated by the processor 7 according to the number of plays which are available to the player in view of the monetary value stored on the smart card (e.g. if five or more plays are possible, all three buttons are activated and illuminated).

- 5 The player presses one of the illuminated buttons 9, whereupon the processor 7 detects the selection and generates an appropriate output signal. This signal corresponds to the signal produced following insertion of coins into the coin mechanism 2 sufficient for the selected number of plays. The signal is passed to the input of the control board 8. It will be appreciated that the control board 8 is unaware of whether the signal is a  
- 10 response to coins inserted into the coin mechanism 2 or to a deduction from a smart card.

- Depending upon the option button 9 pressed by the player, the processor 7 deducts the appropriate number of game fees from the monetary value read from the smart card.
- 15 The old value stored on the card is then overwritten with the new value. At the same time, the processor 7 causes an update message to be sent to the smart card server 6 over a Local Area Network (LAN) 10. This message contains the player's customer account number (read from the smart card), the new monetary value, and a flag to indicate that the message is a customer update message. The smart card server 6 maintains a  
20 database in a memory system 11, the database holding customer account numbers and respective monetary values. When a customer update message is received from the gaming machine 1 (or from another gaming machine or another smart card station), the server 6 updates the record of the appropriate customer. In this way, monetary values stored on smart cards and in the server database are always synchronised.

25

- In a further modification to the existing gaming machine 1, a win payout signal, generated by the control board 8 in the event of a win by a player, is diverted away from the input of a payout mechanism 12 to an input of the processor 7. If the processor 7 detects such a signal, and recognises that the player is playing with cash, the signal is  
30 routed to the input of the payout mechanism 12. The winnings are delivered to the payout slot 13 of the gaming machine 1. If on the other hand, the player is playing with a smart card, the processor 7 causes the winnings to be credited to the monetary value

stored on the smart card. An appropriate customer update message is sent to the smart card server 6 where the player's customer record is updated. Any winnings credited to a player's smart card may be redeemed at a cash desk of the club. The device 4 may provide an option for the player to receive the winnings in cash.

5

It will be appreciated by the person of skill in the art that various modifications may be made to the above described embodiments without departing from the scope of the present invention.

- 10

Claims

1. Gaming machine payment apparatus arranged in use to be physically attached as a separate unit to a gaming machine, the gaming machine having a coin mechanism for receiving a gaming fee from a player and a control board having an input for receiving a signal from the coin mechanism when a player has inserted a correct gaming fee, the gaming machine payment apparatus comprising:
  - a smart card reader/writer for reading data from and writing data to a player's smart card inserted into the reader/writer, said data representing a monetary value;
  - 10 a processor arranged to receive data read from the smart card and to deduct a gaming fee from the corresponding monetary value and to write the new monetary value to the smart card, and to generate a replica of said signal produced by the coin mechanism; and
  - an output coupled to said input port of the gaming machine control board for providing said replica signal to the control board.
- 15 2. Apparatus according to claim 1, wherein said processor has an input coupled to an output of the gaming machine control board for receiving win values therefrom, the processor being arranged to write data to the smart card via the smart card reader/writer to credit a monetary value stored on the smart card with the win value.
- 20 3. Apparatus according to claim 1 or 2, wherein the gaming machine payment apparatus has an output coupled to a central computer server, said processor being arranged to transmit an updated smart card monetary value to the central server.
- 25 4. Apparatus according to any one of the preceding claims, wherein the processor has means for checking the validity of a smart card inserted into the smart card reader/writer.
- 30 5. Apparatus according to claim 4, said means comprising means for reading an expiry time stamp from the card and for comparing the time stamp against the current

time, wherein, only if the time stamp is earlier than the current time is the player allowed to play.

5 6. Apparatus according to any one of the preceding claims and comprising player actuable means for selecting single game or multigame play options, said processor being arranged to activate or deactivate said options according to the monetary value read from a smart card, and to deduct an appropriate gaming fee from that monetary value depending upon the option selected by a player.

- 10 7. Apparatus according to any one of the preceding claims, the apparatus being arranged to receive said signals from the coin mechanism, and to relay these to said input of the gaming machine control board.

15 8. A system for controlling a plurality of gaming machine payment apparatus according to any one of the preceding claims, the system comprising:  
a central computer server coupled to an output of each gaming machine payment apparatus, the central computer server having a memory for storing customer account numbers and respective monetary values, and means for synchronising monetary values stored in said memory with monetary values written to smart cards by said gaming  
20 machine apparatus.

25 9. A system according to claim 8 and comprising a Local Area Network to which said central computer server and each of said gaming machine payment apparatus are connected.

10. A method of paying a fee for playing a gaming machine, the gaming machine having a coin mechanism for receiving a gaming fee from a player and a control board having an input for receiving a signal from the coin mechanism when a player has inserted a correct gaming fee, the method comprising:

30 reading data from and writing data to a player's smart card inserted into a smart card reader/writer, said data representing a monetary value;

receiving data read from the smart card and deducting a gaming fee from the corresponding monetary value and writing the new monetary value to the smart card, and generating a replica of said signal produced by the coin mechanism; and providing said replica signal to said input of the control board.



Application No: GB 0108219.7  
Claims searched: 1-10

Examiner: Dave McMunn  
Date of search: 14 September 2001

## Patents Act 1977 Search Report under Section 17

### Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:  
UK CI (Ed.S): G4V (VAA, VAK, VAL, VBB).  
Int CI (Ed.7): G07F 17/32, 17/34.  
Other: ONLINE : WPI, EPODOC, JAPIO.

### Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
Y	WO 98/47113 A1 (GEMPLUS). See Fig 1	3,8,9
Y	WO 96/08798 A1 (GEMPLUS). See Figs 1 & 2	3
X, Y	US 5,575,374 (GEMPLUS). See Figs	X: 1,2,4-7,10 Y:3,8,9

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

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